Radiologic association between chronic sinusitis and anatomical variations of the nasal cavity

B. Bijani[1,2], R. Qasemi Barqi[2], J. Najjari Alamooti[3]

[1] Medical Microbiology Research Center, Qazvin University of Medical Sciences, Qazvin, Iran
[2] Department of Infectious Diseases, Qazvin University of Medical Sciences, Qazvin, Iran
[3] Department of Radiology, Qazvin University of Medical Sciences, Qazvin, Iran

Corresponding Address: Reza Qasemi Barqi, Department of Infection, Bu-Ali Sina Hospital, Qazvin, Iran
Tel: +98-28-33332930; Email: rqasemibarqi@yahoo.com
Received: 5 Dec 2017; Accepted: 10 Apr 2018

Abstract

Background: Chronic sinusitis is defined as a symptomatic inflammation of the paranasal sinuses for at least 12 weeks. Many risk factors such as genetic malformations, allergic rhinitis, gastro esophageal reflux, exposure to cigarette smoke and anatomical variations play a role in chronic sinusitis. In numerous studies nasal cavity anatomical variations are introduced as one of the most important risk factors for chronic sinusitis.

Objective: The aim of this study was to determine the association between the anatomical variations in paranasal cavities and chronic sinusitis.

Methods: This cross-sectional study was performed on 218 suspected participants (over 18 years old) to chronic sinusitis who were referred to the infectious diseases clinic of Bu-Ali Sina Hospital, Qazvin from 2015-2016. According to the positive or negative confirmation of sinusitis in the CT scan, patients allocated into two groups and the prevalence of underlying characteristics and anatomical variations were compared.

Findings: Sinusitis was confirmed by CT scan in 103 (47.2%) participants. There was significant statistical correlation between sinusitis and closed osteomeatal complex and concha bollosa (P= 0.001 and 0.01 respectively), but the correlation between sinusitis and septal deviation, paradoxical curvature of the middle turbinate, agger nasi and haller cells was not statistically significant.

Conclusion: A significant statistical correlation was observed between chronic sinusitis and the presence of some anatomical variations of the nasal cavities such as closed osteomeatal complex and agger nasi cells. Alterations in sinus drainage and ventilation dysfunction may considered to play a role in this correlation.

Keywords: Sinusitis, Nasal cavity, Paranasal sinuses, Concha bollosa, Radiology

Citation: Bijani B, Qasemi Barqi R, Najjari Alamooti J. Radiologic association between chronic sinusitis and anatomical variations of the nasal cavities. J Qazvin Univ Med Sci 2018; 22(3): 13-22.